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ABSTRACT

A full-time literacy course was held during August and September, 1969, in the Chiduku Tribal Trust Land (Rhodesia). The purpose was to assess the feasibility of teaching illiterate adults the 85 lessons of the primer in an intensive course and to see if it was then possible to teach them how to keep simple farm and household records and accounts as the basis for a follow-on program. A longitudinal study was made of the new literates six months after the course. The purpose was to determine if the newly acquired literacy had become "functional" through the keeping of records under the supervision of the local agricultural demonstrator, if literacy had been retained (or to what extent), and if literacy was related to individual "modernization" level as seen in adoption of improved practices. The general impression from limited test results is that those who completed the primer managed to maintain but not improve reading and writing skills and that literacy input and the adoption of improved crop and home economics practices were positively related. The full-time approach seems feasible and offers definite advantages compared with the organization of part-time classes in rural areas. (EB)

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EVALUATION OF THE CHIDUKU LITERACY PROJECT

AN ABRIDGED REPORT

A micro-study of rural illiteracy in the Tribal Trust Lands of Rhodesia

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INTRODUCTION

A full-time adult literacy course in the vernacular was held during August and September, 1969, in the Chiduku Tribal Trust Land. The course included instruction on farm and household records and accounts.

This new approach to literacy teaching in the African rural areas of Rhodesia has already been reported (1) and the preliminary report should be consulted for background information.

The present report is a summary of a longitudinal study of the new literates undertaken over a period of six months following the conclusion of the literacy course.

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(1) SMITH, G.A. A Preliminary Report of the Chiduku Literacy Project, University College of Rhodesia, Institute of Adult Education, November, 1969.

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RESEARCH OBJECTIVES

The objectives of this study were three in number:-

1. Effectiveness of the follow-on programme

The first objective was to assess whether it was feasible to base literacy follow-on activities (following the conclusion of the course which was essentially 'simple' literacy at an 'elementary' level (1)) around the keeping of rural records and accounts, utilising the services of the local agricultural demonstrator. This part of the project was aimed at making the acquired literacy 'functional'.

2. Assessment of literacy retention

Many authorities have pointed out that numbers of new literates relapse into illiteracy within a short period following the conclusion of a class or project.

Fairly accurate assessments were made of initial literacy levels, literacy input and student achievement during the literacy course, and the second objective of the study was to assess the extent of their literacy retention after a period of six months.

3. Literacy effect and rural development

Increasing attention is being paid to the relatinnship between literacy and 'development' (2).

The third objective of the study was to examine this relationship at the individual 'modernisation' level in the Rhodesian Tribal Trust Lands using the adoption of various improved practices as a criterion.

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(1) Definitions suggested by J.B. BOWERS in The Evaluation of Functional literacy Projects, UNESCO Workshop Report, London, 3-22 August, 1969, F. Wood, Editor, University of London, Institute of Education, pp.17-18.

(2) The term 'development' is used to describe change at the societal level, and 'modernisation' at the individual level as proposed by E.M. ROGERS in: Modernisation Among Peasants. The impact of communication. Holt, Rinehart and Winston, New York, etc., 1969. pp.8-9 and 14.

RESEARCH INSTRUMENTS

The follow-on programme

A questionnaire was prepared which was administered to the 'experimental' group (new literates, N=18) to ascertain the amount of support each subject had received in literacy and related activities during the period of six months subsequent to the literacy course.

Data was collected on:

The number of visits paid by the agricultural demonstrator to each new literate.

The amount of actual help given by the demonstrator with literacy and related activities. (This was later graded into three levels 0=nil or little, 1= infrequent, 2= frequent).

Assistance with literacy and related activities given by other persons.

Incentives and disincentives to continuing literacy activities.

Incentives and disincentives in the adoption of improved practices.

Improved practices and other benefits attributed to literacy.

Major problems of new literates in the retention of literacy.

Retention of literacy

Arrangements were made to carry out a series of short tests with the 'experimental' group at Chitenderano School at the end of April, 1970, to assess to what degree they had either gained or lost literacy skills. Short tests were designed and where possible these were based on the literacy course post-tests.

The writing test consisted of the first five words of the literacy course post-test.

The arithmetic test was made up of five examples in simple addition and five in simple subtraction taken from the literacy course post-test. (Money examples were not used because of possible confusion since decimalisation of the Rhodesian monetary system).

The reading test was based on a short passage from a post-primer level 2 reader (Primer = level 1).

The comprehension test consisted of three questions based on the test reading passage.

Reading and comprehension were graded into three levels by one of the adult literacy teachers:

0 = very little or nil ability
1 = some ability, but some difficulty
2 = satisfactory.

At the same time as testing for retention of literacy, an assessment was also attempted of the degree to which subjects had utilised their literacy skills during the six months following the literacy course.

Two of the adult literacy teachers carefully questioned individuals about the number and subject-matter of books and leaflets they had read since the end of the literacy course. The use of writing was assessed, firstly by careful questioning on the number of letters written, and secondly by examination of the writing in the farm and household records. This was also graded into three levels similar to reading and comprehension.

The effects of literacy

The UNESCO Workshop (1969) (1) suggested that evaluation studies of literacy effect should concentrate upon behavioural rather than attitude change.

In deciding which data was relevant and constituted adequate indicators of individual 'modernisation' in the context of the Tribal Trust Lands, an initial list of 'improved practices' generally accepted as superior to and more desirable than 'traditional' practices was drawn up. These practices were then discussed with crop, livestock and home economics specialists in the Department of Conservation and Extension, and a final list of 105 items considered feasible for peasant farmers to adopt was agreed upon. The final checklist consisted of forty-four items on crop production, twenty-nine items on livestock production and thirty-two items on home economics. Each item consisted of several sub-questions:-

1. To ascertain whether the respondent had adopted the practice or not.
2. To determine when the practice was first adopted.
3. To gather details/evidence of adopted practices.
4. To ascertain sources of information in the adoption of practices.
5. To determine reasons for adoption or non-adoption of practices.

(1) The Evaluation of Functional Literacy Projects. UNESCO Workshop Report, London 3-22 August, 1969, op.cit.p.13.

RESEARCH DESIGN AND PROCEDURES

The samples

During the period April/May, 1970, the questionnaire on the follow-on programme, literacy retention tests, and the checklist of improved practices were administered to the eighteen subjects in the 'experimental' group (new literates) who could be contacted.

Towards the end of May more illiterate volunteers were sought from within the same area for participation in a second full-time literacy course planned to take place in August, 1970. Twenty-seven individuals volunteered. Literacy course pre-tests were administered to all of these and eighteen were selected for study as the 'control' group. These individuals were then interviewed individually and the checklist of improved practices was administered to them.

It must be pointed out that in experimental research design, the selection of random samples of a sufficiently large size is theoretically the solution to the control of unknown variables. However, in a real-life situation a compromise with the ideal of random selection is often dictated by circumstances. This is particularly so in adult education programmes where the participants are more likely to be self-selected volunteers.

Caution must therefore be exercised in generalising the findings in this study to any wider 'hypothetical parent population'.

The 'experimental' group

The 'experimental' group has already been described in the earlier report of the Chiduku Literacy Project. However, during this evaluation only eighteen of the twenty-four adults who attended the literacy course could be contacted at home. For three of these, either pre- or post-literacy course tests were unavailable due to absences from the course. The 'experimental' group consisted of fifteen women and three men, and the mean age of the group was forty-seven years.

Six of these subjects were in literacy Class A, three were in Class B, four were in Class C (although one left the course after a month) and five were in Class D (one left after a month). It should be noted that subjects in Class D could not complete the primer during the course and remained illiterate.

The 'control' group

It was decided to match the 'control' group with the 'experimental' group on the variable of sex because in the African family there is a division of work responsibilities and the male plays a particularly important role in decision-making.

Only fifteen women volunteered for the second literacy course, these were all accepted as part of the 'control' group. Three of the twelve men were selected at random to make the number up to eighteen.

The mean age of the 'control' group was forty years.

The experimental and control groups compared 'before' treatment

The two groups were compared on age, initial literacy level (global score derived from pre-course tests) and the numbers of improved practices adopted before the course, to determine whether they were matched on these variables.

TABLE 1 below gives the results of this comparison and the probability value of χ^2 based on the median test.

TABLE 1

'Experimental' and 'Control' groups compared on age, literacy level and improved practices 'before' treatment

	Median Age	Median Literacy Level	Median Improved Practices
'Control' group	41.0	9.0	21.5
'Experimental' group	42.5	9.5	22.5
Probability level for χ^2	$.09 < P < .1$	$> .99$	$> .99$

Initial literacy level and initial improved practices did not differ between the two groups, but there was some indication that age did. However, it can be argued that, taking into account intellectual decline and slower innovativeness with age, this variable is weighted in favour of the control group.

These results suggest that the two groups were initially similar on the independent variable - literacy level, and on the dependent variable - adoption of improved practices.

'Before' and 'after' measurement of improved practices

Before and after measurements are intended to measure performance of the subjects or the situation before the commencement of a programme and again **after** it is concluded.

Although a certain amount of bench-mark information was collected for the 'experimental' group during the literacy course in August, 1969, detailed measurement of improved practices 'before' the course was not feasible. It was not known which of the illiterates would in fact volunteer to participate in the course, and it was feared that the people would be unwilling at this early stage to discuss questions concerning land and livestock in any detail with strangers. Initial measurement of the 'control' group later in 1970 was made possible because by this time the project had become accepted in the area and people were familiar with interviews and the idea of testing and fact-collection had become accepted.

The checklist of improved practices was therefore designed to differentiate between the adoption of improved practices 'before' the literacy course (August/September, 1969) and 'after' the course. Sub-question 2 for each item on the checklist was used to probe the time when the practice was first adopted. The literacy course was not mentioned during the administration of the checklist.

Procedures

Evaluation took place approximately six months after the conclusion of the literacy course. This short time period assisted subjects to recall whether improved practices were adopted 'before' of 'after' the literacy input. It was also thought that this relatively short time period would minimise the impact of extraneous variables. A disadvantage was that it did not allow sufficient time for adoption of some of the improved practices, e.g., harvesting and marketing of crops.

Two African Shona-speaking research assistants were used to collect data. They worked together as a team, one asked questions, the other recorded data.

One of the research assistants had previously carried out an intermediate survey during December, 1969, to check on problems and progress in continuing literacy and in keeping records and accounts. This intermediate survey was useful in maintaining contact with the 'experimental' group and in suggesting the design of data-collecting instruments for later evaluation.

The two research assistants were rehearsed in a standard interview and recording procedure and the checklist was

pre-tested before use with a small group of peasant farmers in another area.

Following initial appointment with each individual, the acquaintanceship was renewed, the second research assistant was introduced and the purpose of the data collection was explained. To avoid any biased linking of responses with the literacy course, the checklist was administered first. Evidence and details of practices adopted were carefully checked and recorded. This made the interviews a lengthy process and collection of information took up to two days for each individual. Interviews were broken off and continued at a later time if respondents either appeared to be getting fatigued with questioning or if they had to leave for work or other commitments.

The presence or absence of the spouse was a situational factor which was impossible to control during interviews, but this did not appear to significantly affect answers to questions.

ANALYSIS OF RESULTS

The follow-on programme

Of the eighteen individuals making up the experimental group only two reported frequent visits and help from the agricultural demonstrator with records or advice on improved practices.

One is a respected leader in the community, he lives near to the demonstrator and cannot be ignored. The other is related to the demonstrator's wife. Many of the visits to both of these individuals were entirely social.

Following the conclusion of the literacy course in ~~September~~ September, 1969, there was a demand from other literate peasant farmers in the area to be issued with records and allowed to take part in the follow-on programme. It appears that the demonstrator has concentrated his efforts on these farmers, because he believed the 'new literates' were a waste of his time and that one should 'work with the best' to achieve results in improved agriculture. (1).

This switch to the more progressive farmers in the community was made possible by a lack of an extension programme and inadequate supervision.

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(1) The temptation to intervene at this stage (what might be termed 'the action research problem') so as to link the work of the demonstrator more closely with the new literates was resisted by the author. This enabled a more realistic appraisal of the role of the demonstrator in the follow-on programme under conditions of normal supervision.

Another factor which affected the follow-on programme was the early onset of the rains and heavy work commitments in the lands soon after the literacy course was concluded. Lack of time to continue study was reported as a major problem by eight individuals, and seven stated that they needed more ('continuous') help with numbers, new words and writing.

It is apparent that except for the decimalisation of money course (one day, organised with the assistance of the Adult Literacy Council) and the provision of reading materials, there has not been a serious attempt to organise a follow-on programme around the keeping of rural records and improved practices. What has been achieved by the 'experimental' group is largely due to their own individual initiative and efforts.

Literacy retention

Literacy retention tests were carried out under rather difficult conditions. Owing to the fact that there was a funeral on the day of testing, only thirteen individuals took the tests. Some of these arrived late for testing. Two had to leave early before the tests were completed.

Despite these limitations the results are sufficiently interesting to comment upon, although they give no more than an indication of the retention of literacy skills.

When compared with the scores from the literacy course post-tests, those individuals for whom results are available appear to be able to write about as well as they could at the end of the literacy course. However, there appears to be a considerable loss in arithmetic ability (addition and subtraction).

For reading and comprehension a comparison is not possible with the literacy course post-tests. However, indications are that those individuals who took the tests can read and comprehend material at reading level 2 - the reading level immediately following completion of the primer. However, two individuals have reading difficulties and two have comprehension difficulties at this level.

The general impression from these limited test results is that individuals from Classes A, B and C (i.e., those who completed the primer) have managed to maintain but not improve the reading and writing skills which they achieved on the literacy course.

Two individuals from Class D who attended for literacy retention tests were unable to score on any of the tests. Observations by the research assistants suggest that this also holds true for the other three individuals from Class D who did not attend for testing.

Application of literacy skills in writing letters, reading books and leaflets and keeping records and accounts was very variable. It is not possible to say from the rather inadequate figures to what extent the keeping of records might have assisted literacy retention. Observations by the research assistants support the impression that it is the level of literacy ability which is the main factor determining the practical application of literacy skills.

Literacy effects

It can be seen from TABLE 2 that the mean improved practices adopted by the experimental group as a whole 'before' the literacy course was 23.7.

An additional mean of 12.3 practices was adopted during the six months following the conclusion of the course.

Of these improved practices adopted 'after' the course, 6.8 were attributed by the respondents directly to the literacy project, 2.2 were attributed partly to the literacy project and partly to other influences, and 3.2 were attributed to other reasons not connected with the project.

TABLE 2

Total Practices 'before' and 'after': 'Experimental' Group

Literacy Class Individual	Class A						Class B			Class C				Class D					
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	$\bar{X}$
Practices 'before'	22	41	32	19	23	24	35	17	28	18	33	18	25	19	18	14	22	19	23.7
Practices 'after'	8	10	12	14	10	12	17	10	15	12	20	13	9	21	13	5	16	4	12.3
Direct Literacy	4	7	10	9	8	12	10	7	7	6	9	10	5	8	6	2	2	1	6.8
Partial Literacy	2	1	1	1	2	0	5	0	3	5	4	1	1	7	1	0	5	1	2.2
Other reasons	2	2	1	4	0	0	2	3	5	1	7	2	3	6	6	3	9	2	3.2

The raw scores are highly variable and it is impossible to draw any statistically significant conclusions from this data, but it is interesting to note that Class D as a whole appears to lag behind the others in the number of practices adopted 'before' ($\bar{X}$ = 18.4). However, as a group they appear to adopt approximately the same number of practices 'after' as the others ($\bar{X}$ = 11.8). At evaluation, individuals from Class D were still illiterate and yet it can be seen from TABLE 2 that they attribute a mean of 3.8 adoptions directly to literacy. The explanation for this is that literate relatives and friends have assisted them by explaining information contained in various printed materials.

Although they cannot read or write, these individuals are trying to 'keep up' with other new literates. The research assistants suggest that they are acting as literates because they fear community ridicule if they are seen to be failures. It is also suggested that there might be personality changes and they now see themselves as more innovative than previously.

The 'experimental' and 'control' groups compared 'after' treatment

After interviews with the 'experimental' group were concluded the checklist of improved practices was administered to the 'control' group using the same standard procedure.

TABLE 3 sets out the totals, means and ranges for the 'experimental' and 'control' groups for the adoption of improved practices 'after' the literacy course.

TABLE 3

'Experimental' and 'Control' Groups: Adoption of crop, livestock and home economics practices 'after' the literacy course

	Crops		Livestock		Home Economics	
	Exp. N=18	Control N=18	Exp. N=17	Control N=15	Exp. N=18	Control N=18
Total	86	22	18	8	117	15
Mean	4.8	1.2	1.0	.53	6.5	.8
Range	1 - 10	0 -4	0 - 5	0 - 2	0 -12	0 - 5

TABLE 4 compares the numbers of practices adopted 'after' treatment and the probability values of χ^2 based on the median test.

TABLE 4

'Experimental' and 'Control' groups compared on the number of improved practices adopted 'after' treatment

	Crop Practices	Livestock Practices	Home Economics Practices
'Control' group	22	8	15
'Experimental' group	86	18	117
Probability level for χ^2	$<.01$	$>.99$	$<.001$

Livestock practices adopted 'after' did not differ between the two groups, but crop and home economics practices were significantly different.

These results suggest that literacy input and the adoption of improved crop and home economics practices are positively related. The impact of the literacy project appears to have been greatest in the domain of home economics practices, and to have had a negligible effect on livestock husbandry.

These results might be expected because of the preponderance of women participants (N=15), because of the early onset of the cropping season, and due to the complex role of cattle in tribal society, changes in livestock practices are relatively more difficult.

Validity and reliability of the checklist

Although it was not intended that the checklist would be used as a prediction instrument for the adoption of improved practices, its predictive validity was assessed by comparing the number of practices adopted 'before' the literacy course with those adopted 'after' for each individual.

Rank difference correlations (Spearman) were calculated for the 'experimental' group and for the 'control' group.

Rather low positive correlation coefficients were obtained in both instances.

Experimental Group: obtained ρ = .26. With N=18, not significant (one-tailed test).

Control group: obtained ρ = .44. With N=18, significant at the .05 level (one-tail test).

Although no definite conclusion can be drawn, the lower correlation for the 'experimental' group may suggest that the literacy effect is proportionately greater on 'late adopters' in this group or that these individuals find it easier to innovate when sufficiently motivated.

The internal consistency of the checklist was examined using the item analysis procedure described by Diederich (1). Using the criteria for item difficulty and discrimination suggested by Diederich, of the 105 items making up the checklist only forty-six meet the standards suggested for discrimination, and of these thirty-one come from the middle range of difficulty.

The results reflect on the construct validity of the checklist. However, an internal consistency correlation is essentially an assessment of the homogeneity of the measuring instrument, and it is likely poor discrimination is due to the heterogeneity of the checklist. In attempting to measure a complex criterion such as 'modernisation', purifying the checklist by discarding items with poor discrimination may reduce its criterion coverage and thus in fact lower its validity. It is felt, therefore, that items should not be discarded merely on evidence from an internal consistency measure, but should be supported by evidence external to the instrument itself.

The construct validity of the checklist could possibly be improved by the elimination of irrelevant items, by pre-testing the checklist with a sample of the more progressive individuals (e.g., Master-Farmers) from the same area. This would give guidance on the relevance of certain practices and adoption trends for any particular area. However, it would probably involve a restructuring of the checklist for different project areas and might make the comparison of replicate studies difficult.

It was not feasible to use the procedure of test/retest to assess the reliability of measurements on the checklist.

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(1) DIEDERICH, Paul B. Short-cut statistics for Teacher-made Texts. Educational Testing Service, Princeton, etc., 2nd Edn.1964. pp.6-12.

Horst's modification of the general Kuder-Richardson 20 formula described by Guilford (1) was used to obtain a coefficient of equivalence where one point was given for every practice adopted 'before' the literacy project and zero for non-adoption of each practice. The 'experimental' and 'control" groups were combined for this purpose.

The checklist was divided into three sections, crop practices, livestock practices and home economics practices. A reliability coefficient was calculated for each section.

Crop items:	obtained r_{tt} = .82	$P < .05$
Livestock items:	obtained r_{tt} = .65	$P < .05$
Home economics items:	obtained r_{tt} = .71	$P < .05$

Wider literacy effects

There was no attempt to measure the effects of literacy beyond the level of the individual, although there are indications of increased school enrolment, discussions amongst the new literates concerning the need for a permanent adult education centre, and active interest at community level (the headman and his advisers) in road and water supplies improvement. Existing organisations - women's clubs and church, have also been stimulated by the project in various ways.

FACTORS IN THE ADOPTION OF IMPROVED PRACTICES

The data already discussed appears to support the hypothesis that literacy and innovativeness are positively related. However, analysis of responses to the checklist also indicates that there are other important extraneous variables which influence the adoption or non-adoption of improved practices.

Stated reasons for adoption or non-adoption of improved practices

Responses to the checklist giving reasons for adoption or non-adoption of improved practices and sources of information were collated under relatively broad descriptive headings. Only the more important and interesting findings can be reported here.

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(1) GUILFORD, J.P. Fundamental Statistics in Psychology and Education. McGraw-Hill, New York, etc., 1965. p.461.

There is some indication that in a number of cases individuals have moved directly from the 'evaluation' stage to the 'adoption' stage in the adoption process. This suggests that they already had awareness and some information concerning various improved practices.

However, the two main reasons given by respondents for non-adoption of improved practices are (1) 'lack of awareness or inadequate information' and (2) 'shortage of money or appropriate resources'. The impressions of the research assistants confirm that there is a great need for the demonstration and teaching of a wide range of basic agricultural and home economics skills in the area, together with a need for assistance with group organisation to make the best use of what local resources are available.

The agricultural demonstrator is named as the main source of information for both crops and livestock practices - even for a neglected group. In addition he is also mentioned as one of the main sources of information for home economics practices. This shows the potential value of a field-worker living permanently in the area, and raises the question of whether agricultural demonstrators should be trained to teach a wider range of skills in addition to agriculture.

Women's Clubs are also reported as important sources of information for home economics practices.

The image of Government

Due to frequent past interventions in tribal agriculture, many of the people are convinced that any project connected with agriculture must be a Government scheme. With some, this feeling is so strong that they maintain that Government is solely responsible for the success or failure of tribal agriculture. A particularly unfavourable concept of Government and agricultural development stems from a loans scheme for fertiliser several years ago. Successive droughts caused crop failures and people became heavily indebted.

Witchcraft, 'Bantu Independent Churches' and disease

There is widespread belief amongst the Shona that misfortune, including sickness and untimely death, are brought about by witches and angry ancestral spirits. The less-educated usually turn first to the witchdoctor (nganga) for divination and treatment. This is aggravated by lack of a clinic in the Nyangombe area.

These strongly held superstitious beliefs affect the adoption of improved health and other practices.

Many African Independent Churches are related to the Zionist movement which places great emphasis on spiritual healing. Official doctrine is that prayer alone is efficacious in overcoming illness. Three members of the 'experimental' group and four members of the 'control' group belong to Zionist churches. Consequently, strongly held beliefs prevent them adopting modern practices in the prevention and treatment of disease. This prohibition also generally extends to any livestock they own and to certain crop practices such as chemical seed-treatment and the use of fertilisers.

The role of cattle in tribal society

The relatively small number of improved livestock practices adopted both 'before' and 'after' the literacy course has already been noted. Hughes (1) describes a number of roles that cattle have in tribal society. These include bride-wealth payments (lobola), funerary ceremonies and animals specifically dedicated to an ancestor spirit (mudzimu animals). He points out that, despite the introduction of money, cattle have an emotive significance and are still valued as the most prestige-full form of wealth.

These tribal customs and attitudes must be taken into account in understanding the complexity of the problemsinvolved in the adoption of improved livestock practices.

The tribal farm family

Tribal farm families vary considerably, particularly in regard to participation of family members in decision-making, availability of labour and economic level. The main factor appears to be the presence or absence of the husband.

Individuals making up the 'experimental' group were categorised under one of four types of decision-making unit:-

1. men;
2. women - husband absent;
3. women - husband present - positive attitude to improved practices.
4. women - husband present - apathetic or negative attitude to improved practices.

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(1) HUGHES, A.J.B. The Role of Cattle in Tribal Society (Mimeographed Paper, 10 pp). Department of Conservation and Extension, Salisbury, Rhodesia, May, 1964.

The presence of an active male (normally the husband) to assist with heavy labouring work is an important factor in the tribal farm family's ability to cope with the heavy tasks of crop production, particularly during the first months of the farming season. Responses to the checklist revealed that labour shortage (often expressed as a lack of time) was frequently given as a reason for non-adoption of improved practices.

Five economic levels were formulated for people living in the area. Individuals in the 'experimental' group were then categorised under one or other of these levels by the research assistants. The group consisted of individuals with a range of economic levels from:-

Level 2. Subsistence production with only occasional agricultural sales, to -

Level 5. A larger and regular agricultural surplus for sale, plus a small but regular cash income (derived from crafts or urban sources), and subsistence.

It is presumed that, where decision-making is more difficult (category 4), where there are labour shortage problems, and at the lower economic levels, adoption of many improved practices is more difficult. However, with such small numbers and in the absence of more detailed case-histories for each family extending over a period of time, the evidence is insufficient to draw any firmer conclusions.

Other extraneous variables which appear to be important in the adoption of improved practices, but on which there is a lack of data are: (1) urban feedback and influence in those families with adult migrant children, and, (2) the amount of chronic ill-health and degree of malnutrition amongst the people of the area.

It can be seen that, because there are so many other important extraneous variables, the relationship between literacy and the adoption of improved practices is a complex one.

INTERPRETATION OF RESULTS AND CONCLUSIONS

Limitations of the study

Perhaps the major limitations and weaknesses in this study are common to most evaluative studies of adult education, where the participants are self-selected volunteers, and the programme and evaluation are undertaken in the realistic natural setting.

These constraints affect sample size and randomisation. In the absence of randomisation, control of extraneous variables is also difficult.

Consequently the results of this investigation must be accepted with some caution and should be limited to the sub-populations studied. Generalisation to a wider population will only be possible when the findings of similar comparative studies are available.

A lack of precision in the data-collecting instruments - the tests and the checklist, should also be borne in mind. These were developed for this particular study, because no other suitable, well-tried and standardised instruments were available.

A further limitation is that this study covers a period of only six months and this is too short a time for adequate assessment of literacy retention and the adoption of many improved practices.

The follow-on programme

One of the main reasons for basing the follow-on programme on the keeping of rural records and accounts with the active support of the local agricultural demonstrator was to assess the feasibility of using government field-workers in this kind of project as part ot their normal work. (There are almost 1,000 such demonstrators resident and working in the Tribal areas).

The results show that the demonstrator did not support the new literates as planned, and the follow-on programme became largely ineffective because of this lack of close support.

It is difficult to generalise from this one case, but (based on the author's experience) it must be presumed that a good proportion of government field-workers would behave in a similar way in the absence of close supervision and checking of results by senior staff.

However, despite staff and supervision problems, the results of record-keeping and other efforts by new literates to maintain literacy, are sufficiently interesting that it is felt the concept of a well organised follow-on programme, relating literacy closely to local development, is worth pursuing.

Literacy retention

Due to the fact that the literacy retention tests have not been standardised, and bearing in mind the poor test conditions involving thirteen individuals only - the results must be

accepted with caution and can give no more than an indication of literacy retention.

Nevertheless, taking into account the negligible follow-on programme, and heavy work commitments during the first months after the course, a much greater loss of reading and writing ability might have been expected. Five individuals from Class D who did not complete the primer during the course are still unable to read or write. There might be several possible reasons - level of intellectual ability, personality problems or physical disabilities, e.g., chronic sickness, eyesight, etc.,

Although the pre-course tests could possibly be used as a screening device to eliminate these individuals before commencement of literacy teaching, it is unlikely that this would commend itself to sponsoring agencies, and it does appear that attendance at such a concentrated literacy course leads to modernisation (adoption of improved practices) even though the individual remains illiterate.

Literacy effects

Comparison between the 'after' measures of the 'experimental' and 'control' groups suggests that there is a positive relationship between literacy and the adoption of improved crop and home economics practices. However, even those who are still illiterate (Class D) appear to adopt about the same number of practices as the new literates from other classes. There is also wide variability in the adoption of improved practices 'after' the course by the 'experimental' group.

It is considered that these results are due to the influence of extraneous variables. These broadly speaking are of two kinds - those associated with the literacy course and those not related to the literacy course.

Variables associated with the literacy course might include: 'Hawthorne' effect - response to special attention, 'placebo' effect - faith in the treatment, and the personal influence of the practitioners. The influence of these variables could explain an apparent literacy effect on individuals who are in fact still illiterate (Class D).

Extraneous variables not connected with the literacy project such as economic level, religious affiliation, etc., are clearly important in influencing the adoption of improved

practices, and could account for the extremely variable results 'after' the literacy course.

Taking extraneous variables into account it would appear that the literacy input is best considered as multi-dimensional in nature, and that the role of literacy in 'modernisation' is more 'facilitating' or 'catalytic' rather than directly causal.

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Institute of Adult Education

A PRELIMINARY REPORT OF THE CHIDUKU LITERACY PROJECT

A micro-study of rural illiteracy
in the Tribal Trust Lands
of Rhodesia.

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INTRODUCTION

This report is a brief summary of a new approach to literacy teaching in the African rural areas of Rhodesia.

A full-time literacy course was held during August and September, 1969, in the Chiduku Tribal Trust Land. The first objective was to assess the feasibility of teaching illiterate adults the eighty-five lessons of a primer in a full-time intensive course. The second objective was to ascertain whether it was then possible to teach these new literates how to keep simple farm and household records and accounts as the basis for a follow-on programme.

The Adult Literacy Council agreed to provide four paid 'supervisory' teachers to undertake the teaching. The author was responsible for producing the farm and household records and accounts, and for evaluation of the project.

A more detailed report will be produced for those who work with illiterate peasant farmers and who may wish to undertake similar projects. A report of the follow-on programme will also be prepared when this is completed.

BACKGROUND INFORMATION

Literacy Programmes in Rhodesia

There have been three main approaches to teaching adult illiterates in Rhodesia.

An extension of the school system. One of the earliest forms of adult education for Africans in Rhodesia was the evening or community school. These schools had the same sort of syllabus and subject matter as the ordinary primary school. They have been strongly criticised in the past, because of the large number of small children in the classes, for the lack of specially designed syllabuses and for the use of methods and materials unsuited to adults.

The organisation of these schools has recently been modified to remedy these shortcomings, and enrolment has been restricted to pupils over fifteen years old. There are approximately 3,000 pupils at present in these evening and part-time classes which flourish mainly in urban areas.

Government policy has been to tackle illiteracy through a wide provision of primary education. Except for the evening and part-time classes, adult literacy work has been left to the churches and voluntary agencies.

Rhodesia Lit-Lit. In 1964 a survey of adult literacy and Christian literature was conducted by the Southern Rhodesia Christian Conference. The authors of the Survey Report (1) arrived at an estimated figure of over 70% functional illiteracy for Africans in the

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(1) Southern Rhodesia Christian Conference. Survey Report on Adult Literacy and Christian Literature in Southern Rhodesia, August, 1964. (Literature Secretary C. Thorpe) pp. 36-63.

country as a whole. This figure was derived from the number of adults who had not completed five years of primary schooling.

Following publication of the report, the churches conducted a pilot adult literacy scheme in 1965 to test primers. Subsequently, various supplementary readers were also produced for new literates.

Rhodesia Lit-Lit, which was formed from the Southern Rhodesia Christian Conference Literature Committee in 1968, has never directly organised literacy classes. It has concentrated on training teachers and providing literacy material for other agencies working in this field.

Adult Literacy Council. The first organised literacy classes in Rhodesia were initiated by the "Courtesy Campaign". With the dissolution of the Central African Federation, the "Campaign" organisers decided to devote available funds to literacy work, and the Adult Literacy Council was established in 1961. Its activities have been limited to the Shona speaking areas, and mainly to the Salisbury region.

In comparison with Rhodesia Lit-Lit, the Adult Literacy Council has directly organised literacy classes. These classes have been taught either by paid supervisory teachers, or by closely supervised volunteer teachers.

"Adult Literacy". From the 1st November, 1969, a single literacy organisation known as "Adult Literacy" has been established by the amalgamation of Rhodesia Lit-Lit and the Adult Literacy Council.

At present there are approximately 1,000 to 1,200 adults in part-time literacy classes sponsored by "Adult Literacy". The number of students fluctuates and is greater during the non-agricultural season between April and September.

The Rhodesian Tribal Trust Lands.

The Tribal Trust Lands consist of 40,000,000 acres, and make up nearly one half of the total land surface of Rhodesia. In all recent Rhodesian constitutions these reserved areas have been set aside for the use of the indigenous Africans of the country.

More than half the total African population lives in the Tribal Trust Lands (2,893,870 out of a total estimated African population of 4,817,950 - provisional figures from the 1969 Census of Africans).

Approximately one quarter of the Tribal Trust Lands falls into the predominantly cropping areas and supports just over half of this rural population.

Figures given in the Economic Survey of Rhodesia, 1969, (1) estimate the 1968 gross income for African rural households to be £29.9 millions, made up of £27 millions home consumption and £2.9 millions sales.

This is a gross income from agriculture of slightly more than £10 per head per annum for the African peasant population.

Because only a trickle of cash from the Tribal Trust Lands finds its way into the money economy it keeps the demand for the products of home industry far below what it should be. Due to its size this "submerged" sector is felt as a drag throughout the whole economy.

The problem of the development of these areas has increasingly concerned successive Rhodesian governments and the Administration since the end of World War II. Concern has been expressed in several different ways. There is the problem of accelerated erosion in both arable and grazing areas, there is a need to bring the tribal population into the money economy so that it may contribute more to social and other services, and there is increasing concern with the rapidly expanding African population with little prospect of paid employment for the great majority of school-leavers.

Chiduku Tribal Trust Land is situated south of the main Salisbury-Umtali road. Chitenderano School, where the literacy course was held, is 142 miles by road from Salisbury.

Chitenderano is situated in the Nyangombe area of Chiduku. The area has an average rainfall between 18" to 24" per annum and there are frequent dry spells during the rains. The recommended farming system is livestock production, with crops for cattle-feed and drought-resistant cash crops. Soils are derived mainly

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(1) Economic Survey of Rhodesia, 1969. Government Printer, Salisbury, C.S.R. 10-1969. Table 3, p.14.

from granite and are generally of poor fertility.

ORIGINS AND PLANNING OF THE PROJECT

Discussions with the Literature Secretary of Rhodesia Lit-Lit and with the Director of the Adult Literacy Council in 1968, underlined several serious limiting factors in the promotion of literacy programmes in rural areas.

Student attendance tends to be irregular at part-time classes, which are held two or three times a week. There is a high 'drop-out' rate in classes taught by volunteer teachers. There are acute problems of supervision of classes and volunteer teachers in rural areas. At the end of the beginners' classes there is a large number of drop-outs; adults may acquire some ability to read and write, but this is not tied to any specific functional use. As a result of these discussions the author gained the impression that there was a lack of concentrated effort considering the limited financial and teaching resources available. In addition, there was no deliberate effort to integrate literacy with the development of specific communities, and little evidence of any social or economic 'pay-off' from existing literacy programmes.

To overcome these limitations, the author suggested to the Director of the Adult Literacy Council, that the primer, consisting of eighty-five lessons, should be taught as a full-time course during the 'slack' agricultural season between May and October. It was proposed that the supervisory teachers should be the instructors on this concentrated course which would last about one month. It was also suggested that the teaching of the primer should be followed by a further period of about ten days during which the new literates would be taught how to keep simple farm and household records and accounts. This was to overcome the problems of supplementary literature distribution. It was envisaged that records and accounts would not only lead to economic benefits, but would be the means to keep the new literates reading and writing. This would be the basis for the follow-on programme.

The Nyangombe area of the Chiduku Tribal Trust Land was selected for the project because of the

willingness of the people to make the necessary local arrangements, and the keenness shown by the local Agricultural Officer, who agreed to commit field staff to the follow-on programme.

DESCRIPTION OF THE COURSE AND STUDENTS

In spite of what seemed to be thorough local planning and publicity, only eleven students registered on the first day of the course. Within another three days the enrolment increased to thirty-four, but eleven of these were classified as 'juveniles' (under sixteen years of age).

Reasons for the relatively poor enrolment include: poor local publicity by the Nyangombe organising committee, the religious attachment of Chitenderano school, the course fee of 12/6d. to cover the cost of materials, doubts that illiterates could become literate in such a short period, and the transfer of the local Agricultural Officer just before the course started.

When the course commenced students were streamed into one of four classes on an assessment by the teachers of their rate of progress in the first lessons of the primer. The four classes thus completed Part I of the course ('elementary' or 'basic' literacy) on different dates.

Student 'drop-outs'. The course was initially limited to the period of the school holidays when the classrooms were available. This was a period of slightly less than four weeks from 20th August to 16th September. It meant that the primer had to be completed in less than three weeks and the records and accounts in less than a week.

As the course progressed, it became obvious that even the fastest class would not complete all the lessons in the primer by the planned deadline. However, the local pastor agreed that the church at Chitenderano which consisted of one room could be used to accommodate three of the classes. Makeshift arrangements were also made to accommodate the other class, and the course was extended by eleven days until 27th September.

This extension caused difficulties for five adult students who were not able to continue after 16th September or thereabouts. One adult student left the course sick after a few days and did not return. Seventeen adult students thus attended throughout the course, including the extra eleven days. Except for the sick adult, there were no adult 'drop-outs' during the period originally agreed upon for the course.

Three juveniles were sent away after a few days by the course treasurer (one of the adult students) because they could not pay the course fee. This reduced the enrolment to a total of thirty students. In this group of thirty students attendance up to 16th September averaged 27.8 each day. Adult absences were due mainly to sickness or attendance at funerals. There were proportionately more absences by the juveniles.

Time taken to complete the primer. Students attended the course for a total of twenty-eight and a half days (five and a half weeks). Of this period, two to three days were spent on registration, pre-course tests, post-course tests and rehearsals for the presentation of literacy certificates. Classes were held for nine to nine and a half hours a day, five days a week, during the period of the course.

The total time taken by each class to complete Part I of the course (the 85 lessons of the primer plus additional arithmetic) is set out in Table 1.

TABLE 1

Time taken by each class to complete Part I.

Class	No. of Adult Students	No. of hours	No. of days (approx.).
A	6	181	19
B	3	205	21½
C	3	243	25½
D	6	253	26½

The number of students is limited to those adults who took both pre- and post-course tests.

Class D progressed with great difficulty only as far as lesson 47 in the primer.

Records and Accounts: Once Part I and the post-course tests were completed, classes A, B and C went on to Part II - records and accounts. Table 2 shows the amount of time each class spent on records and accounts.

TABLE 2

Amount of time spent by each class on Part II : Records and Accounts.

Class	No. of hours	No. of Days (approx.).
A	69	7
B	39	4
C	11	1
D	Did not take Part II	

The Students. Twenty-two adult students completed Part I of the course; of these, five were male and seventeen female. Their ages ranged from twenty-three years to sixty-seven years, with a median age of forty-five.

Seven of these adults had never attended school before, eleven had spent a few months in Sub-standard A - the first year in primary school, and four had completed Sub.A. It appears that, to the people of Nyangombe, the term 'illiterate' includes those with some previous schooling up to the completion of the first year at school.

In this group there was no apparent relationship between either age or amount of previous schooling and performance as indicated by the results of the post-course tests.

All, except one of the students, were ordinary cultivators who practised unimproved farming methods, and had very little contact with the agricultural extension service.

THE TESTING PROGRAMME

Pre-course Tests

Informal pre-course tests were designed to measure pre-course attainments of potential students. All tests were designed as power tests and were administered by the teachers.

In this abbreviated report it is not possible to describe the tests or the results of these in detail.

The results of five of the pre-course tests were combined to form an 'index of illiteracy' as follows:-

Ability to write name.
Ability to read words on the first page of the primer.
Ability to write words from the first page of the primer.
Ability to recognise numbers 1 to 9.
Ability to count in English 1 to 100.

These tests were scored:-

No ability = 0
Some ability = 1
Satisfactory = 2

The total test scores were then divided into three levels:

Score	Level
0 - 3	1
4 - 6	2
7 - 10	3

Eighteen adults completed both the pre- and post-course tests, and discussion of results is limited to these students. At the beginning of the course there were seven students at level 1, four students at level 2 and seven students at level 3.

Post-course Tests

The post-course tests were taken on different dates by the four classes. Class D was unable to

attempt the 'sight reading", 'letter writing' and 'computation' tests.

The results of five post-course tests were used to compute the rank-order of students at the end of Part I. These tests were weighted. An arbitrary allocation of points was made, taking into account the complexity of each test.

The weighting scheme was made up of one hundred points allocated as follows:-

Reading	15
Dictation	15
Letter-writing	35
Identification of numbers 1-100	5
Computation	30

Of the eighteen students who completed the post-course tests, the twelve who were in classes A, B and C were also in the top twelve in rank order derived from the scores on the combined post-course tests.

Students who have completed the lessons in the primer are considered by The Adult Literacy Council to be in a position to continue reading and writing on their own. This would broadly apply to eleven of these twelve students who scored between forty-nine and eighty-six on the combined post-course tests. The other student who had a score of twenty-four will require considerable help if she is to make further progress.

The six students in class D could not complete the primer and their scores ranged between one and eleven on the combined post-course tests. Their reading was limited to varying degrees of syllable recognition. They were not able to write more than a few syllables or words of two syllables, and two of them were still unable to write their own names at the end of the course. These students were all considered to have an 'illiteracy level' of 1 at the beginning of the course.

Records and Accounts Tests

During Part II, students in classes A and B

were taught how to keep the following records and accounts:-

Cash record.
Food consumed in the home.
Crop records.
Assets inventory.
Livestock inventory.
Animal records.
Weekly household account.
Monthly household account.

Tests at the end of Part II included fifty-five entries to be made on the eight different pro-formae used in teaching records and accounts. Seven adult students took these tests and attempted these entries. Four students were able to make more than thirty correct entries. They are considered to be in a position to keep farm and household records reasonably accurately. The other three students will need further assistance in keeping records and accounts.

FOLLOW-ON ARRANGEMENTS

In many literacy programmes 'follow-on' has been based on the provision of reinforcement material for new literates. Problems inherent in this approach have already been briefly mentioned.

One of the two major objectives of the Chiduku course was to ascertain whether the follow-on programme could be based on the keeping of rural records and accounts.

All students who attended the course (including juveniles) were given bound sets of records and accounts with instructions to commence these on 1st October - the beginning of the Rhodesian farming year. It was agreed that the local agricultural fieldworker (Extension Assistant) would pay regular visits to students to give assistance with the records and any technical advice needed.

This has given rise to heavy demands on the Extension Assistant. One of his first tasks has been to assist in making a simple sketch map of each

cultivator's holding and the measurement of acreages, so that rotations can be planned and crop records commenced. There has also been an unexpected demand for the pegging of contours. These practices amount to a very simple type of arable farm-planning, where previously a patchwork of mixed cropping existed.

All the adult and 'juvenile' new literates are taking an active part in these activities. In addition to the new literates, approximately seventy other African peasant farmers, including school-leavers have also joined the records and accounts scheme. Another thirty have been turned away by the Extension Assistant because they were not sufficiently literate.

It has been agreed that five or six study clubs will be formed from the hundred participants. This will enable the Extension Assistant to meet these farmers more frequently, and will assist in the distribution of supplementary 'readers' and other printed material on rural subjects.

TENTATIVE CONCLUSIONS

The broad conclusion from the Chiduku Literacy Course is that a full-time literacy course of four to five weeks is feasible. It is also possible to follow this and teach new literates how to keep simple farm and household records and accounts as the basis for a follow-on programme. However, some of the students may not be able to complete the primer even within the total time available.

A full-time approach does offer definite advantages compared with the organisation of part-time classes in rural areas. These advantages include: better retention of material by students from lesson to lesson, less absenteeism and drop-outs, and reduced supervision problems. Possibly the most important finding is that this type of full-time literacy course is of particular value as a starting point for a community development or agricultural improvement programme in a community. It would seem to be especially valuable for developmental agencies working with specific groups of rural people

where illiteracy is a limiting factor.

With classes of ten students, the estimated cost of £4.10.0d. to £6.10.0d. per student per month (mainly teachers' salaries and expenses, with a generous travel allowance for supervision) is approximately the same as for students in existing part-time literacy classes.

Finally, it appears that the provision of appropriate follow-on programmes, for those adults and juvenile 'drop-outs' who have completed three or four years in primary school, might considerably reduce the estimate of functional illiteracy in the context of the Tribal Trust Lands of Rhodesia.

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